Job Description

Research Associate

Salary: Grade 7
Contract: Full time, fixed term (42 months)
School/Department: School of Engineering, Mathematics and Physics
Location: Canterbury Campus
Responsible to: Dr Jonathan Nixon, Reader in Engineering and Project Coordinator

Job purpose

Join OptimICE, an international Horizon Europe project working to reduce the impact of icing on wind energy in cold climates. Over 42 months, 14 organisations will bring together research and industry expertise to improve how wind turbines are monitored, operated and maintained in icy conditions.

We are seeking a Research Associate to work closely with Dr Jonathan Nixon and the Kent research team. You will develop individual and collaborative research objectives, develop and validate physics-informed AI models for icing detection and wind-power prediction, and share your findings through project outputs, publications and conferences. Your research will help wind farm operators anticipate icing, predict power production and make better decisions about ice protection and maintenance.

Key accountabilities and duties

- Contribute to the design and execution of OptimICE research, ensuring alignment with project objectives.
- Develop research objectives, collaborating with colleagues to enhance project outcomes.
- Conduct individual and collaborative research, gathering and analysing turbine, weather and icing-sensor data to develop and validate physics-informed AI models across sites and seasons.
- Organise, store and write up results and report regularly to the research group, partners and other stakeholders.
- Publish research findings in high-quality peer-reviewed journals and support the presentation of results at conferences.
- Carefully plan research activity to ensure project milestones are achieved within the expected timeframe.
- Communicate research findings and complex information effectively to diverse audiences, both in writing and orally.
- Contribute to proposals and applications to external funding bodies where appropriate.
- Build and maintain professional relationships with colleagues, students and external partners to support collaboration and networking.
- Assist students with research skills and supervise student projects where appropriate.
- Manage research-related administrative tasks, ensuring compliance with ethical and regulatory standards.
- Participate in team meetings and contribute to discussions on research direction and strategy.
- Engage in continuous professional development to enhance research skills and knowledge, applying new information to research activities where feasible.

Internal & external relationships

Internal: Wider research team, academic supervisor/principal investigator, support staff, students

External: External researchers/collaborators, funding bodies, project participants, external institutions/organisations where necessary

Health, safety & wellbeing considerations

This job involves undertaking duties which include the following health, safety and wellbeing considerations:

- Regular use of Screen Display Equipment
- Pressure to meet important deadlines such as might be inherent in high profile projects
- There may be a requirement to work evenings and weekends
- Ability to occasionally travel in a timely and efficient manner between campuses
- Overseas travel is a requirement of the role (typically around one short trip per year)

Person specification

The person specification details the necessary skills, qualifications, experience or other attributes needed to carry out the job. Applications will be measured against the criteria published below.

Selection panels will be looking for clear evidence and examples in an application, or cover letter (where applicable), which back-up any assertions made in relation to each criterion.

Essential Criteria:

- A relevant postgraduate degree (Master's or PhD), a PhD close to submission, or equivalent relevant research experience in computer science, engineering, data science, applied mathematics or a related field. (A)
- Proven experience in conducting research projects, including data collection and analysis (A,I,T)
- Specialist expertise in, or theoretical knowledge of machine learning, AI and time-series analysis (A, I, T)
- Demonstrated ability to write and publish research findings in peer-reviewed journals (A,I)
- Experience working collaboratively in a research or academic setting, contributing to joint projects and initiatives (A,I,T)
- Familiarity with relevant research methodologies and tools using in wind energy data analysis and predictive modelling (A,I,T)
- Strong verbal and written communication skills, with the ability to convey complex information clearly to diverse audiences (I,T)
- Excellent organizational skills with the ability to manage multiple tasks and meet deadlines (I,T)
- Commitment to continually update knowledge and understanding in field or specialism (I)
- A firm commitment to fostering a working and learning environment that is respectful, inclusive and values diversity, including diversity of thought, and which enables staff and students from a wide range of backgrounds to thrive (I)

Desirable Criteria:

- Familiarity with more specialized or advanced research methods (A,I)
- Familiarity with icing models and cold-climate systems. (A, I)

Assessment stage: A - Application; I - Interview; T - Test/presentation at interview stage